

**Planning and Development of Components
of the SEDSAT Project
DO162**

Final Report

The objective of this effort was to supply senior management advice to the SEDSAT Project at UAH. When the effort started, the SEDSAT Project was student initiated, student managed and student implemented with advice from the UAH faculty and staff. The intent of this effort was particularly to supply further help for the UAH manager (a student) with project schedules and interface documentation required by MSFC.

Mr. Ed. Valentine was selected by UAH, with MSFC concurrence, to provide the desired advice to the SEDSAT Project.

When this effort started, the satellite (SEDSAT) being designed and built by UAH Students for Exploration and Development of Space was to be launched from a MSFC Small Experiment Deployer using a tether system. The Small Experiment Deployer was to be carried on the Space Shuttle.

According to plan, Mr. Valentine worked with the SEDSAT manager, Dennis Wingo, through the phase 0/1 Safety Review for SEDS and SEDSAT in May 1996. In the weeks thereafter, MSFC management reconsidered its role in the project. The first MSFC decision was communicated in a letter dated June 21, 1996 from Rein Ise, Manager, in the MSFC Science and Applications Project Office to Charles A. Lundquist, UAH Associate Vice President for Research.

That letter said:

“Dear Dr. Lundquist:

As you know, MSFC has decided to terminate the SEDS portion of the STS-85 SEDS/SEDSAT mission. This decision was reached after assessing the manpower and schedule impacts resulting from the redesign of the SEDS deployer and electronics box in order to meet the STS safety requirements. However, in accordance with our discussions with you and Ken Harwell, we are recommending to NASA Headquarters and Goddard Space Flight Center (GSFC) that SEDSAT be implemented as a directly injected payload on STS-85.

In order to enable you to proceed toward the STS-85 mission, MSFC intends to continue its support of the SEDSAT development by completing previously committed activities such as the thermal and structural analysis, development of the

battery, and environmental testing. MSFC will, however, withdraw from all future safety and interface related activities and you need to plan to deal directly with GSFC in those areas.”

Following the MSFC decision, the UAH SEDSAT project undertook to replan the project as recommended by Mr. Ise. Mr. Valentine aided the SEDSAT management in this replanning.

A month later, July 26, 1996, Mr. Sidney P. Saucier, Manager of the MSFC Science and Applications Projects Office wrote the Dr. Kenneth Harwell, UAH Senior Vice President for Research. He announced that:

“...I must regrettably inform you that MSFC has reluctantly decided to end its involvement in the SEDSAT project. MSFC does intend to complete the delivery of the three SEDSAT hardware items already in the procurement cycle (batteries, separation switches, and the thermal actuators) to allow UAH to complete the payload, in case it chooses to do so. Should UAH decide to continue, the utilization of MSFC’s environmental test facilities will be subject to later review, depending on UAH’s progress and the availability of facilities.

I very much regret that this decision is necessary; however, I think that under the circumstances it is the only realistic course of action.”

Accordingly, with the advice of Mr. Valentine, the UAH Office of the Senior Vice President for Research, other UAH officials, and the SEDS organization undertook another restructuring of the project. These deliberations involved several discussions with personnel of NASA Headquarters. One conclusion from this restructuring study was that SEDSAT should be evolved into a project that is faculty directed through student submanagers and is student executed.

This conclusion was accepted by all concerned parties. Subsequently, in October 1996, UAH submitted Proposal No. 96-647 to the NASA Johnson Space Flight Center for “SEDSAT-1 Development and Launch”. Mark W. Maier, Ph.D., Assistant Professor in the UAH Department of Electrical and Computer Engineering was named Principal Investigator and will direct the students working on the project. This plan envisions launching SEDSAT as an auxiliary payload on a NASA expendable rocket launch in 1998. The proposal was accepted by NASA, and the project is continuing.

With the change to a faculty directed project and with the MSFC withdrawal from participation, the need for further MSFC supported advice to the SEDSAT Project was removed.

However, Mr. Valentine's efforts during the critical periods described above were valuable contributions toward the ultimate success of the SEDSAT Project.

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